

**REMARKS**

Claims 1-12, 23-35, 39-40, 43-44 and 47-49 are pending in this application. The Office Action withdraws claims 13-22, 36-38, 41-42, 45-46 and 50; and rejects claims 23-25, 34, 40, 43 and 47 under 35 U.S.C. §102(e). Applicants amend claims 23 and 40. Support for the amendment can be found in the specification as filed, for example, at paragraph [0025]. No new matter is added.

Applicants thank the Examiner for indicating the allowability of instant claims 26-33, 44 and 48 if rewritten in independent form including all the limitations of the base claim and any intervening claims.

**I. Rejection Under 35 U.S.C. §102(e)**

The Office Action rejects claims 23-25, 34, 40, 43 and 47 under 35 U.S.C. §102(e) as anticipated by Shibata. The Office Action asserts that Shibata discloses each feature of instant claims 23-25, 34, 40, 43 and 47. Applicants amend independent claims 23 and 40, and respectfully traverse the rejection.

Shibata discloses adhering electrode layers (21 and 31) as discontinuous thin film layers that are not continuous and not uniformly dense. See Shibata at paragraph [0042]. In particular, portions of the surfaces of individual particles in Shibata do not contact others perfectly. Accordingly, Shibata teaches that, if its discontinuous thin films were continuous, there would be no room for the reactive gas to enter, and thus it would be impossible to form Shibata's three phase interface, as is necessary for the reaction to occur. In other words, Shibata teaches directly against having a continuous thin film. See Shibata at paragraph, for example, [0042].

In contrast, instant independent claims 23 and 40, as amended, from which claims 24-25, 30, 43 and 47 depend, recite "the substrate permeates the hydrogen in the state of protons or hydrogen atoms." As discussed above, this limitation is taught away from in Shibata.

Support for this amendment can be found in the specification, as filed, at paragraph [0025], for example. Thus, the permeability of the claimed membrane is achieved by the thinness and high separation ability of the film as opposed to a discontinuity as described in Shibata.

Thus, nowhere does Shibata disclose the uniformly dense particle arrangement of the thin membrane layers described in instant independent claims 23 and 40 from which claims 24-25, 34, 43 and 47 depend. Further, Shibata expressly teaches away from such a configuration.

For at least the foregoing reasons, Shibata does not anticipate instant claims 23-25, 34, 40, 43 and 47. Reconsideration and withdrawal of the rejection are earnestly solicited.

## **II. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Date: May 17, 2007

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